

GIPSA Backgrounder

Reference Laboratory for Bioengineered Grains and Oilseeds

The United States Department of Agriculture (USDA), under the authority of the United States Grain Standards Act, 7 U.S.C. 71 et. seq., (USGSA), will establish a reference laboratory at the Grain Inspection, Packers and Stockyards Administration's (GIPSA's) Technical Center in Kansas City, MO. The laboratory will be used to evaluate and verify the validity of analytical procedures applied to the detection and quantitation of bioengineered traits in grains and oilseeds. It also will be used to establish sampling procedures for use in testing bioengineered grains and oilseeds. These standardized sampling and testing methods will be implemented through GIPSA's inspection program. The lab is scheduled to open in time for the 2000 crop year.

GIPSA will provide these services to meet a market need to ensure reliability of bioengineered crop detection methods and to facilitate information exchange, which, in turn, will decrease transaction costs and increase overall market efficiency.

GIPSA's mission is to facilitate the marketing of grain and oilseeds for the benefit of U.S. agriculture. The introduction of bioengineered grains and oilseeds is affecting the movement of grains in both domestic and export markets. Certain food manufacturers and retailers are requesting non-bioengineered ingredients and products, particularly corn and soybeans, in response to consumer demand. This trend has accelerated a need to further segregate the marketing of grains and oilseeds, which has, in turn, created a demand for reliable and accurate analytical techniques to differentiate non-biotech from bioengineered grains and oilseeds.

The most promising analytical techniques currently available for identifying grains with bioengineered traits are Enzyme Linked Immunosorbant Assay (ELISA), lateral flow strips, and Polymerase Chain Reaction (PCR). While these technologies show promise, limited technical information or performance verification by an unbiased third party are available. The reference laboratory will meet the market's need for impartial, professional verification of these technologies. GIPSA has traditionally taken this role in the marketplace. Hundreds of methods for the analysis of grain have been standardized to help the grain markets. For example, GIPSA standardized the testing of various mycotoxins in grain by evaluating and approving commercially available test kits that measure the mycotoxin content. Grain markets rely on GIPSA, as an unbiased entity, to supply this important function in facilitating the marketing of grain.

The credibility of this reference laboratory will largely depend on the willingness of biotechnology firms to cooperate with GIPSA by providing the following information and materials:

- Reference materials:
 - ⇒ Supplies of grain with a specified expressed trait to be used in evaluating analytical tests.
 - ⇒ Sufficient quantities of the protein standards for the development and evaluation of analytical procedures that detect and/or quantify genetic modification.
- Genetic sequence information for the evaluation of DNA-based analytical techniques.
- Specific information on analytical techniques developed or used by the biotechnology firms.

Much of this information is proprietary, and therefore confidentiality agreements will be established to protect the intellectual property rights of all parties involved. Appropriate security systems will be installed in the reference laboratory to ensure the protection and safekeeping of all sensitive information.

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